

10/ Reconsideration
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Shaw

Docket: A-1559

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: / Group Art: 2673
Guell et al. /
US Serial No.: 09/608,234 / Examiner: Lun Yi Lao
Filed: 6/30/2000 /
Title: EXTERIOR AIRCRAFT VISION /
SYSTEM USING A HELMET- /
MOUNTED DISPLAY /

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Date: 5/6/04Signed: Donald E. Stout

Donald E. Stout, Reg. No. 34,493

REQUEST FOR RECONSIDERATION UNDER 37 CFR 1.116

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is a request for reconsideration of the rejections set forth in the non-final Office Action mailed on February 6, 2004.

Appellants appreciate the Examiner's admission that the previous rejections of the claims were incorrect, and his withdrawal of those rejections, but disagree with the newly imposed rejections.

Claims 1-3, 6-8, 10-14, 17, and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al. '394 in view of Ferguson '313. Appellants respectfully traverse the new rejection as being incorrect.

The Examiner now acknowledges that Hale et al. fails to teach the recited see-through visor which also selectively permits an operator to view actual images disposed in front of the visor. He therefore has supplemented his prior rejection by asserting that the Ferguson patent supplies the missing teaching. However, Appellants traverse this conclusion. The Ferguson patent discloses a conventional heads-up display system which also incorporates a feature providing short duration eye protection. This conventional heads-up display system permits the display of flight data or other information, such as

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"words, symbols, images, pictures, etc.", in the field of view of the pilot, while he is also "viewing something else, such as the scene or view outside of the airplane" (col. 1, lines 34-38). There is no disclosure in the Ferguson patent to indicate that the disclosed heads-up display system is anything more than this conventional approach, since the focus of the patent is on the aforementioned short duration eye protection feature. This feature provides for the blockage of light through the pilot's visor when it is unsafe for the pilot's eyes. As discussed in col. 21, lines 28-65, the invention provides that, in the event that the light blocking feature is activated, the computer 302 is operative to compute what the image of the real space which the pilot would otherwise see through his visor would be, and to display that image through the heads-up display system, by overriding the heads-up display electronics for a short period of time. It is important to note that this is not a conformal system, as disclosed and claimed by Appellants, wherein both the artificially generated and real images may be viewed together by the pilot through the visor, with the artificially generated image being displayed in conformity with the real image so that the effect is seamless to the pilot. Rather, the Ferguson patent system alternately either permits the pilot to view the actual surroundings of the pilot through the visor, or blocks that view for the pilot's protection, and substitutes instead an artificially generated image which is sufficient to permit him to continue to pilot the aircraft, on an emergency basis, for a short period of time. Otherwise, when the ordinary heads-up display system is operating, controlled by electronics 251, simultaneously with the pilot having the ability to view the actual real world through his visor, there is no disclosure in Ferguson that the information displayed by the heads-up display corresponds to the real world image, and is displayed to "conform" with it, as disclosed and claimed.

The Examiner continues to acknowledge that Hale et al. does not teach the usage of staring type sensors, as claimed, but rather, specifically teaches the usage of turret-mounted, movable sensors. However, the rejection continues to propose that "Hale teach sensors could be either be positioned or movable to cover a wide field (see column 2, lines 41-43)". Based on this conclusion, the Examiner states that it "would have been obvious to have sensors (71-74) are (sic) non-turret mounted unmovable sensors since Hale et al have disclosed a large number of staring sensors fixed to a host platform with

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maximal coverage with minimal moving parts would reduce cost and more reliable (sic)...and movable sensors can be replaced by unmovable sensors..."

Appellants have at length explained why such a substitution would not have been obvious, but the Examiner has ignored the explanation, without acknowledgement. Clearly, the passages referenced by the Examiner in Hale et al. teach away from using staring type sensors. These passages are in the background portion of the patent specification, and actually state that it has been suggested in the prior art that large parallel arrays of staring type sensors, rather than serial gimbaled sensor scanners, would be advantageous, but the patentees did not agree that they were. Rather, the passages noted by the Examiner (the parts he conveniently ignores) actually state that such parallel fixed arrays have a number of problems, including a long processing time, platform motion which creates vibration problems, and increased complexity, requiring greater processor load and consequent greater cost (see col. 2, lines 5-30).

The Hale et al. patent, consequently, teaches that staring-type sensors are inappropriate for systems of the type disclosed. Adjustable (gimbaled) sensors, disposed on turrets, and adjusted by means of servo-motors, are utilized in order to permit the sensor to compensate for motion or vibration of the underlying platform (col. 3, lines 3-20 and 55-57, Figs. 4-7, col. 5, lines 45-65). Thus, the Examiner's rejection requires that the basic premise of the Hale et al. patent be destroyed, by replacing the adjustable servo-controlled sensors with fixed staring-type sensors, even though Hale et al. specifically teach away from doing that. Clearly, therefore, the rejection is improper. *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 230 U.S.P.Q. 416 (Fed. Cir. 1986), *Specialty Composites v. Cabot Corp.*, 6 U.S.P.Q.2d 1601 (Fed. Cir. 1988).

More particularly with reference to the claims, independent claim 1 recites that each of the claimed vision sensors are non- turret mounted immovable sensors. In contrast, as noted above, the Hale et al. patent discloses sensors 1-4, which, as shown in Fig. 4 thereof, are disposed in movable fashion on the vehicle. Servo motor 60 is disclosed as permitting "major changes in the position of the detector 1" (col. 5, lines 60-65). Additionally, the claim recites that the system, which superimposes the output signal on the visor, also selectively permits an operator to view actual images disposed in front of said visor. The system at issue is a "conformal" system, meaning, as described at

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length above, that the system is conformal to the outside world, and the superimposed image matches 1 to 1 with the outside world view. On the other hand, even if the teachings of Ferguson would have been obviously applied to the system of Hale et al. '394, the resultant system would not be a conformal system, as required by the claim language.

Thus, claim 1 is clearly patentable over the Hale et al. '394 patent in view of Ferguson, together with all of the dependent claims 2-21. For the reasons noted above, it would not have been obvious to substitute staring-type sensors for the turret-mounted sensors of Hale et al., because such a substitution would destroy the premise of the Hale et al. invention.

Claims 4-5 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al. '394 in view of Ferguson '313, and further in view of Myrick '789. However, since claims 4-5 and 15 depend upon patentable claim 1, this rejection falls as well.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al. '394 in view of Ferguson '313, and further in view of Hale et al. '364. This rejection falls, since claim 9 depends upon patentable claim 1.

Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al. '394 in view of Ferguson '313, and further in view of Muller '782. However, this rejection falls, since claims 18-19 depend upon patentable claim 1.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al. '394 in view of Ferguson '313, Myrick '789 and Kaneko '418. This rejection falls, however, since the claim is dependent upon patentable claim 1.

Claims 22-24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al. '394 in view of Ferguson and Okamura et al. '343. However, independent claim 22 is similar, in many respects, to patentable claim 1, in that immovable vision sensors are recited, together with the capability of viewing, together, actual and superimposed images on the display screen. Also, the claim recites a controller which permits varying levels of intensity of light to be transmitted through the screen or for alternatively selectively disabling selected regions of the screen so that light cannot pass through those selected regions. Clearly, this claim is patentable over Hale et al. '394 in

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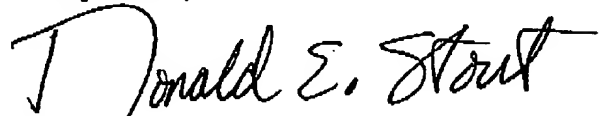
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view of Ferguson, as are claims 23-26, which are dependent thereon, for the reasons discussed above in connection with claim 1.

Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hale et al. '394 in view of Ferguson '313, Okamura et al. '343 and Krouglicof et al. '504. However, this rejection falls since claim 25 depends upon patentable claim 22.

In view of the foregoing, Applicants respectfully submit that each of the pending claims are allowable over the prior art of record, and an early notification of allowance is earnestly solicited. The Examiner is requested to contact the undersigned at the number below, should any further questions or issues need to be resolved.

Respectfully submitted,



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May 6, 2004

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